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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/30/1999

Matthew D. Halfant

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05/26/2006

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EXAMINER

HUYNH, CONG LAC T

ART UNIT

PAPER NUMBER

2178

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/475,093

Applicant(s)

HALFANT, MATTHEW D.

Examiner

Cong-Lac Huynh

Art Unit

2178

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to communications: RCE filed on 3/15/06 to the application filed on 12/30/99.
2. Claims 21-41 are pending in the case. Claims 21, 28, 35 are independent claims.
3. The rejections of claims 21-41 under 35 U.S.C. 102(e) as being anticipated by deCarmo have been withdrawn in view of the amendment.

Claim Objections

4. Claims 24 and 38 are objected to because of the following informalities:
in claim 24, it appears that the word "frame" is missing after "selecting another" (line 3).
In claim 38, the word "frame" is also missing after "means for selecting another " (line 3).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 21-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Regarding independent claim 21, the amended feature "enhancing the selected video frame by incorporating information included in the other digital video frames into the particular digital video frame" is not disclosed in the specification.

The specification shows taking a number of MPEG frames from the MPEG video stream to create a processed frame where the MPEG video stream has movement information embedded within it (page 8). The specification further discloses "once the video frames and movement information are available, the process of image enhancement of a block can continue" (page 9). As such, the movement information is already included the frames of the MPEG video stream. So, enhancing a frame selected from said video stream by *incorporating information included in other video frames* appears to be redundant since the video frames already have the movement information.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 23, 30, 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 23 recites the limitation "the associated digital video frames" in line 3.

There is insufficient antecedent basis for this limitation in the claim.

10. Claim 30 recites the limitation "the associated digital video frames" in line 4.

There is insufficient antecedent basis for this limitation in the claim.

11. Claim 37 recites the limitation "the associated digital video frames" in line 3.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 21-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over deCarmo et al. (US Pat No 6,415,101, 7/2/02, filed 7/27/98) in view of Rangan et al. (US Pat No. 6,493,872, filed 10/7/98).

Regarding independent claim 21, deCarmo discloses:

- selecting from the original digital video stream, a particular one of the digital video frames for enhancement (col 2, lines 28-67; col 6, lines 43-54: selecting one of multiple views)
- selecting from the digital video stream, any others of the digital video frames (col 2, lines 28-67: selecting additional views)
- enhancing the selected video frame based upon information included in the other digital video frames and the particular digital video frame (col 2, lines 28-67: modifying the selected view for enhancing the view with different angles)

deCarmo does not disclose:

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- enhancing the selected video frame by incorporating information included in the other digital video frames into the particular digital video frame
- displaying the enhanced digital video frame without reference to the other digital video frames

Rangan discloses:

- enhancing the selected video frame by incorporating information included in the other digital video frames into the particular digital video frame (col 20, line 65 to col 21, line 7: adding data of identified numbers of chosen frame intervals to video frames shows incorporating information included in the other digital video frames into the particular digital video frames for enhancing the video frames)
- displaying the enhanced digital video frame without reference to the other digital video frames (col 21, lines 1-18: the fact that the data stream is combined and resynchronized to be displayed for viewing as one annotated video stream shows that such enhanced video stream is displayed without any reference to the other video frames whose information is incorporated into the selected video frame)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined Rangan into deCarmo since enhancing a video frame by incorporating information from other video frames in Rangan provides the advantage to include into deCarmo for producing an attractive video with a different way of combining raw material video frames from a video source.

Regarding claim 22, which is dependent on claim 21, deCarmo discloses:

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- obtaining movement information for the selected digital video frame and the other digital video frames (col 2, lines 28-67: the angle block supplied on DVD content is movement information for the selected view)

Regarding claim 23, which is dependent on claim 22, deCarmo discloses:

- identifying portions of the associated digital video frames corresponding to the portion to be enhanced (col 7, lines 31-60)
- enhancing the selected video segment by providing a higher quality image with the larger image (col 7, line 61 to col 8, line 23: resizing the view to provide large image)

deCarmo does not disclose:

- enhancing the portion by incorporating information included in the corresponding other video frame portion into the portion of the selected video frame

Rangan discloses:

- enhancing the selected video frame by incorporating information included in the other digital video frames into the particular digital video frame (col 20, line 65 to col 21, line 7: adding data of identified numbers of chosen frame intervals to video frames shows incorporating information included in the other digital video frames into the particular digital video frames for enhancing the video frames)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined Rangan into deCarmo since enhancing a video frame by incorporating information from other video frames in Rangan provides the advantage to

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include into deCarmo for producing an attractive video with a different way of combining raw material video frames from a video source.

Regarding claim 24, which is dependent on claim 23, deCarmo discloses:

- enhancing different segments of the video content (col 7, line 61 to col 8, line 23)
- selecting another of the stream of digital video frames for enhancement when the enhancement is complete (col 8, lines 24-42)
- continuing the selecting until all of the selected digital video frames, or portions thereof, have been enhanced (figure 7, col 8, lines 43-67)

Regarding claim 25, which is dependent on claim 24, deCarmo discloses manipulating selected ones of the enhanced digital video frames (col 7, line 61 to col 8, line 23).

Regarding claim 26, which is dependent on claim 22, deCarmo discloses manipulating is selected from a group comprising: a zoom operation, a contrast enhancement operation, a luminance control operation, a color adjustment operation, a gamma correction operation, an image sharpening operation, and a color saturation operation (col 7, line 61 to col 8, line 23: manipulating by resizing inherently includes the zoom operation).

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Regarding claim 27, which is dependent on claim 26, deCarmo discloses that the method is executed by a processor unit included in a digital video disc (DVD) player (col 2, lines 27-32, col 6, lines 43-48).

Claims 28-30, 32-34 are for a computer program product of method claims 21-23, 25-27, and are rejected under the same rationale.

Claims 31 and 38 are for a computer program product and an apparatus of method claims 21-23, 25-27, and are rejected under the same rationale.

Claims 35-37, 39-41 are for an apparatus of method claims 21-23, 25-27, and are rejected under the same rationale.

Response to Arguments

14. Applicant's arguments with respect to claims 21-41 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that the claims, as amended, require enhancing a selected digital video frame by incorporating information from any other frames in the video stream (Remarks, page 6).

Examiner agrees. See the rejection above.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Srinivasan et al. (US Pat No. 6,357,042, filed 1/22/99).

Shin et al. (US Pat No. 7,006,569, priority 2/5/99).

Vasudevan et al. (US Pat No. 6,342,904, filed 12/17/98).

Shachar et al. (US Pat No. 6,560,280, filed 2/2/98).

Ghosh et al. (US Pat No. 6,549,211, filed 12/29/99).

Hazra (US Pat No. 6,510,553, filed 10/26/98).

Porter et al. (US Pat No. 5,864,682, filed 5/21/97).

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cong-Lac Huynh whose telephone number is 571-272-4125. The examiner can normally be reached on Mon-Fri (8:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hong can be reached on 571-272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-4125.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cong-Lac Huynh
Primary Examiner
Art Unit 2178
05/22/06